

RICOSH Memo: Green During Construction 10/08

Construction can be dirty work but we have an opportunity to make it cleaner. The green building movement focuses on constructing energy efficient buildings and using less toxic building materials.

Organizations such as Green Global and LEED have developed certification paradigms that are gaining adherents and advocates among building investors, designers, developers, and architects. Investors are increasingly requiring designers and builders to meet these certifications. And many firms, banks, design firms, stipulate that they will only rent space in a "green certified" building.

While there are obvious benefits to this green building movement what is left out of this approach is *air quality while structures are being built*.

Air Quality Concerns.

Carbon monoxide, fine and ultrafine particles, polycyclic aromatic hydrocarbons (PAHs), sulfur and nitrogen oxides, benzene are emitted in significant amounts by ***diesel and gasoline-powered vehicles and equipment*** on construction sites. These toxins have been linked to cardiovascular disease, respiratory symptoms, decline in lung function, exacerbation of asthma, and cancer.

During construction soil, granite, and concrete will be dug, drilled crushed, impacted, abraded. Soil, granite, and concrete contain crystalline silica (sand). Occupational exposure to silica produces silicosis, a chronic, disabling lung disease characterized nodules of scar tissue in the lungs. Each year nearly 300 workers die from silicosis in the US, hundreds more are disabled. Between 3000-7000 new cases occur each year. In addition, crystalline silica is carcinogenic to humans. Construction, more than any other industry

leads in premature mortality (years of potential life lost) from silicosis.

Why not Green During the Construction Phase?

This is an opportunity to directly address the health and environmental impact of stationary equipment and motor vehicles, of dust and silicate exposures, and to integrate worker and community health into a seamless package.

RICOSH in coordination with the American Lung Association of RI, the RI Diesel Collaborative and with the technical assistance of the Air Toxics unit of RI DEM have begun to develop protocols that integrate air pollution issues into the Green Building approach. The fundamental goal of this project is to encourage institutions, developers, designers, and professional organizations to adopt a *Green during construction* pledge and include key parameters of all three metrics in bid and contract specs for construction projects.

- ❖ Restrict idling of gasoline and diesel vehicles.
- ❖ Implement dust suppression controls
- ❖ Reduce exhaust emissions

This would benefit the surrounding community and workers and visitors on the site by reducing both particulate matter, dust and silicates, and toxic gases, like CO. In addition ***this approach will achieve reductions in greenhouse gas emissions.***

For more information contact us at RICOSH.